

```
1  /****                               57  }
2  *
3  * TreeNode4 extends TreeNode by adding four child components, which are
4  * references other TreeNodes. Hence, TreeNode4 is used to represent
5  * quartinary syntactic constructs in a parse tree.
6  *
7  */
8  public class TreeNode4 extends TreeNode {
9
10     /**
11     * Construct this with the given id and child TreeNode references.
12     */
13     public TreeNode4(int id, TreeNode child1, TreeNode child2,
14         TreeNode child3, TreeNode child4) {
15         super(id);
16         this.child1 = child1;
17         this.child2 = child2;
18         this.child3 = child3;
19         this.child4 = child4;
20     }
21
22     /**
23     * Return the String representation of this subtree, which is the String
24     * value of its ID, followed on the next three indented lines by the
25     * recursive toString of its three children. See the documentation for <a
26     * href= "TreeNode.html#toString()">TreeNode.toString() </a> for a general
27     * description the way trees are represented as strings.
28     */
29     public String toString(int level) {
30         String indent = "";
31         for (int i = 0; i < level; i++) {
32             indent += " ";
33         }
34         return symPrint(id) + "\n" +
35             indent + " " + (child1 == null ? "null" : child1.toString(level+1)) + "\n" +
36             indent + " " + (child2 == null ? "null" : child2.toString(level+1)) + "\n" +
37             indent + " " + (child3 == null ? "null" : child3.toString(level+1)) + "\n" +
38             indent + " " + (child4 == null ? "null" : child4.toString(level+1));
39     }
40
41     /** Reference to the left child of this node. */
42     public TreeNode child1;
43
44     /** Reference to the first middle (or second, or third-from-the-last) child
45     * of this node. */
46     public TreeNode child2;
47
48
49     /** Reference to the second middle (or third, or next-to-the-last) child of
50     * this node. */
51     public TreeNode child3;
52
53     /** Reference to the right (or fourth, or last, or rightmost, or
54     * whatever-the-heck-you-want-to-call-it) child of this node. */
55     public TreeNode child4;
56
```